Exelon Generation®

SVP-19-009 10 CFR 50.73

February 28, 2019

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Quad Cities Nuclear Power Station, Unit 1
Renewed Facility Operating License No. DPR-29
NRC Docket No. 50-254

Subject: Licensee Event Report 254/2018-004-01 "Reactor Scram Due to Turbine-Generator Load Reject"

Enclosed is Licensee Event Report (LER) 254/2018-004-01, "Reactor Scram Due to Turbine-Generator Load Reject", for Quad Cities Nuclear Power Station, Unit 1.

This report is submitted in accordance with 10 CFR 50.73(a)(2)(iv)(A) for an event or condition that resulted in manual or automatic actuation of any of the systems listed in paragraph (a)(2)(iv)(B).

There are no regulatory commitments contained in this letter.

Should you have any questions concerning this report, please contact Mark Humphrey at (309) 227-2800.

Respectfully,

Kenneth S. Ohr
Site Vice President
Quad Cities Nuclear Power Station

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Quad Cities Nuclear Power Station

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INPO Records Center **(included in LER Completed)**
SVP Letter File **(Q:\SVP\20YY)**
Reg Assurance Clerk **(for record turnover in EDMS)**

NRC FORM 366 (04-2018)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 03/31/2020

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Information Services Branch (T-2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

(See Page 2 for required number of digits/characters for each block)

(See NUREG-1022, R.3 for instruction and guidance for completing this form http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/)

1. Facility Name	2. Docket Number	3. Page
Quad Cities Nuclear Power Station Unit 1	05000254	1 OF 3

4. Title

Reactor Scram Due to Turbine-Generator Load Reject

5. Event Date			6. LER Number			7. Report Date			8. Other Facilities Involved	
Month	Day	Year	Year	Sequential Number	Rev No.	Month	Day	Year	Facility Name	Docket Number
09	26	2018	2018	- 004	- 01	02	08	2019		05000
									Facility Name	Docket Number 05000

9. Operating Mode	11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: *(Check all that apply)*			
1	☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
	☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
	☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
	☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☒ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
10. Power Level	☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
100	☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
	☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(C)	☐ 73.77(a)(1)
	☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(D)	☐ 73.77(a)(2)(i)
	☐ 20.2203(a)(2)(vi)	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(vii)	☐ 73.77(a)(2)(ii)
		☐ 50.73(a)(2)(i)(C)	☐ Other (Specify in Abstract below or in NRC Form 366A)	

12. Licensee Contact for this LER

Licensee Contact	Telephone Number (Include Area Code)
Rachel A Luebbe – Regulatory Assurance	309-227-2813

13. Complete One Line for each Component Failure Described in this Report

Cause	System	Component	Manufacturer	Reportable to ICES	Cause	System	Component	Manufacturer	Reportable to ICES
D	N/A	N/A	N/A	Y	N/A	N/A	N/A	N/A	N/A

14. Supplemental Report Expected	15. Expected Submission Date	Month	Day	Year
☐ Yes (If yes, complete 15. Expected Submission Date) ☒ No		N/A	N/A	N/A

Abstract (Limit to 1400 spaces, i.e., approximately 14 single-spaced typewritten lines)

On September 26, 2018 at 19:08, Quad Cities Unit 1 received an automatic Reactor SCRAM from 100% power. The SCRAM was the result of a Turbine-Generator Load Reject Trip that occurred when the status of the load reject contacts on one Unit Output Breaker was being tested while the other Unit Output Breaker was open.

The cause of the Turbine-Generator load reject trip was ineffective procedural controls for ensuring both unit output breakers were closed prior to performing contacts status verifications. The immediate corrective actions include procedure revisions to provide enhanced guidance for performing contact checks.

The issue is reportable under 10 CFR 50.73(a)(2)(iv)(A), any event or condition that resulted in manual or automatic actuation of any of the systems listed in paragraph (a)(2)(iv)(B).

LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Quad Cities Nuclear Power Station Unit 1	05000254	2018	- 004	- 01

NARRATIVE

PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor, 2957 Megawatts Thermal Rated Core Power

Energy Industry Identification System (EIIS) codes are identified in the text as [XX].

EVENT IDENTIFICATION

Reactor Scram Due to Turbine-Generator Load Reject

A. CONDITIONS PRIOR TO EVENT

Unit: 1 Event Date: September 26, 2018 Event Time: 19:08 hours

Reactor Mode: 1 Mode Name: Power Operation Power Level: 100%

One Switchyard Ring Bus Unit Output Breaker 6-7 was open at the time of the event as a result of local grid activities.

B. DESCRIPTION OF EVENT

On September 26, 2018 at 19:08, Quad Cities Unit 1 received an automatic Reactor SCRAM from 100% power. The SCRAM was the result of a Turbine [TRB]-Generator [GEN] Load Reject Trip that occurred when the status of the load reject contacts on one ring bus unit output breaker [BRK] (7-8) was being tested while the other ring bus unit output breaker (6-7) was open. The switchyard is configured in a ring bus [BU] to ensure that during full-power operation, when one of the 345 KV breakers is removed from service, at least one of the two ring bus unit output breakers remains closed.

The contact status tests are performed after a ring bus unit output breaker has been manipulated with the unit online. Once the ring bus unit output breaker has been re-closed, the load reject contacts for each output breaker are checked to confirm the contacts are in the open position. While performing breaker manipulations on September 26, 2018, the Operating Crew misinterpreted a step in their governing procedure and the Unit Supervisor incorrectly directed maintenance electricians to perform the contact checks prior to Output Breaker 6-7 being closed.

While checking the status of the load reject contacts for Output Breaker 7-8, the electricians were unable to obtain accurate voltage readings and identified there was no voltage present at the contacts. Believing no voltage was present, the Unit Supervisor directed the electricians to verify continuity across the same contacts using an ohm meter. The continuity verification jumpered across the only set of open contacts in the Turbine-Generator Load Reject circuitry and initiated the Load Reject Trip and corresponding SCRAM of Unit 1.

Following the reactor scram, the station received automatic Group II and Group III containment isolations due to momentary low reactor water level during the transient. The isolations were reset. The reactor SCRAM and the Group II and III containment isolations are reportable under 10 CFR 50.73(a)(2)(iv)(A), as events or conditions that resulted in manual or automatic actuation of any of the systems listed in paragraph (a)(2)(iv)(B).

NARRATIVE

C. CAUSE OF EVENT

The Root Cause was ineffective procedural controls for ensuring both unit output breakers were closed prior to performing contact status verifications and for ensuring the status control checks were performed correctly.

D. SAFETY ANALYSIS

System Design

The Quad Cities' switchyard is configured in a ring bus to ensure that during full-power operation, when one of the 345 KV breakers or one of the 345 KV transmission lines is removed from service, at least one of the two ring bus unit output breakers remains closed. Having both ring bus unit output breakers open at the same time would result in both breakers' load reject contacts being made up, which by design causes a load-reject trip of the Turbine-Generator and a subsequent Automatic Reactor SCRAM.

Safety Impact

The safety significance of this event was minimal. All systems responded as designed during the event. Operators performed required actions safely and in accordance with procedures and training.

Risk Insights

A risk assessment of the turbine-generator trip was performed for this event. The resulting assessment concluded that the event was not risk significant since Conditional Core Damage Probability (CCDP) and Conditional Large Early Release Probability (CLERP) were below the threshold.

E. CORRECTIVE ACTIONS

Immediate Corrective Actions:

The governing procedures were revised to incorporate enhanced guidance for performing contact checks on unit output breakers to support Unit 1 startup.

Follow-up Corrective Actions:

1. Operations Dept. to develop plan to re-enforce Technical Human Performance use within operating crews.
2. Maintenance Dept. to develop plan to re-enforce technical fundamentals within maintenance crews.

F. PREVIOUS OCCURRENCES

No previous similar events have occurred at the site based on a search of station LERs and IRs.

G. COMPONENT FAILURE DATA

No component failures were associated with this event. An ICES entry was completed for the event.